

REMARKS

By the above amendment, informalities in the specification have been corrected with the abstract being amended to delete the utilization of reference numerals therein. Also by the present amendment, the independent and therewith the dependent claims, have been amended to recite the feature of a metal back as previously recited in dependent claim 13 which is provided in addition to the metal sheet which is perforated with a plurality of holes and in which one of the phosphors is disposed. Each of independent claims 1, 15, 16 and 19 whether reciting the feature of a perforated metal sheet, perforated electrically conductive sheet, or a perforated black sheet, which is perforated with a plurality of holes having phosphor disposed therewithin further recite the feature of the metal back which is adapted to be supplied with an anode voltage for leading the electrons from the plurality of cold cathode elements toward the metal sheet, electrically conductive sheet or black sheet. Additionally, each of the independent claims recite the feature that the thickness of the metal sheet, electrically conductive sheet, or black sheet is greater than a thickness of the phosphors disposed within the plurality of holes. Furthermore, by the present amendment, the dependent claims have been amended to clarify features of the present invention and new dependent claim 20 has been added which depends from claim 19 and recites the feature of the metal back being provided on a side of the electrically conductive sheet facing toward the rear substrate.

As illustrated in Figures 1 and 2 of the drawings of this application, for example, a flat panel display device includes a rear substrate 1 having an insulating substrate 10 on which an electron-emission-element-forming layer 19 of cold cathodes serving as electron sources is formed. Furthermore, there is provided a

display substrate 101 which includes a light-transmissive substrate 110 through which light is transmitted, a thin metal sheet, electrically conductive sheet or black sheet 120, which is perforated with a large number of fine holes 122. A low-melting-temperature adhering layer 112 serves for fixing the sheet 120 to the light transmissive substrate 110, wherein phosphors 111 are coated and disposed within the fine holes 122 in the sheet 120, as more clearly illustrated in Fig. 2 of the drawings of this application. Further, a metal back 114 of aluminum is formed on the sheet 120 by evaporation, for example, as described at page 8 of the specification of this application. As further recited in the claims of this application, a thickness of the metal sheet, electrically conductive sheet or black sheet is greater than a thickness of the phosphor disposed within the plurality of holes, as described in the paragraph bridging pages 10 and 11 of the specification. That is, as noted, the thickness of the metal sheet 120 is selected to be larger than that of the layers of the phosphors 111 so that the emitted secondary electrons are absorbed by the inner walls of the fine holes 122 and the metal back 114. Consequently, the emitted secondary electrons can be prevented from entering the adjacent fine holes 122, and thereby the amount of charges accumulated on the phosphors can be reduced. Thus, in accordance with the structural arrangement, as disclosed and claimed, the amount of charged accumulated on the phosphors are reduced and consequently, the life time of the phosphors is lengthened, and since secondary electrons emitted from a given phosphor are prevented from striking a phosphor adjacent to the given phosphor, consequently, unintended phosphors are prevented from emitting light. Applicants submit that such features, as now recited in the independent and dependent claims of this application, are not disclosed or taught in the cited art, as will become clear from the following discussion.

The rejection of claims 1, 3, 8 - 11, 13 and 15 - 18 under 35 USC 102(b) as being anticipated by Mitsutake et al (US 5,760,538); the rejection of claim 7 under 35 USC 103(a) as being unpatentable over Mitsutake et al; the rejection of claims 14 and 19 under 35 USC 103(a) as being unpatentable over Mitsutake et al in view of Spindt (US 5,990,614); the rejection of claims 2 and 4 - 6 under 35 USC 103(a) as being unpatentable over Mitsutake et al in view of Ando et al (US 2002/0079829 A1); and the rejection of claim 12 under 35 USC 103(a) as being unpatentable over Mitsutake et al in view of Mizobata (US 6,333,600 B1); such rejections are traversed insofar as they are applicable to the present claims and reconsideration and withdrawal of these rejections are respectfully requested.

As to the requirements to support a rejection under 35 USC 102, reference is made to the decision of In re Robertson, 49 USPQ 2d 1949 (Fed. Cir. 1999), wherein the court pointed out that anticipation under 35 U.S.C. §102 requires that each and every element as set forth in the claim is found, either expressly or inherently described in a single prior art reference. As noted by the court, if the prior art reference does not expressly set forth a particular element of the claim, that reference still may anticipate if the element is "inherent" in its disclosure. To establish inherency, the extrinsic evidence "must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill." Moreover, the court pointed out that inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.

As to the requirements to support a rejection under 35 USC 103, reference is made to the decision of In re Fine, 5 USPQ 2d 1596 (Fed. Cir. 1988), wherein the

court pointed out that the PTO has the burden under '103 to establish a prima facie case of obviousness and can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references. As noted by the court, whether a particular combination might be "obvious to try" is not a legitimate test of patentability and obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. As further noted by the court, one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.

Furthermore, such requirements have been clarified in the decision of In re Lee, 61 USPQ 2d 1430 (Fed. Cir. 2002) wherein the court in reversing an obviousness rejection indicated that deficiencies of the cited references cannot be remedied with conclusions about what is "basic knowledge" or "common knowledge".

The court pointed out:

The Examiner's conclusory statements that "the demonstration mode is just a programmable feature which can be used in many different device[s] for providing automatic introduction by adding the proper programming software" and that "another motivation would be that the automatic demonstration mode is user friendly and it functions as a tutorial" do not adequately address the issue of motivation to combine. This factual question of motivation is immaterial to patentability, and could not be resolved on subjected belief and unknown authority. It is improper, in determining whether a person of ordinary skill would have been led to this combination of references, simply to "[use] that which the inventor taught against its teacher."... Thus, the Board must not only assure that the requisite findings are made, based on evidence of record, but must also explain the reasoning by which the findings are deemed to support the agency's conclusion. (emphasis added)

Turning first to the disclosure of Mitsutake et al and the Examiner's contentions with regard thereto, the Examiner refers to Item 19 of Figure 2 as disclosing a metal sheet perforated with a plurality of holes arranged in a matrix. The Examiner also refers to Figure 4B (Item 21b) as well as column 8, lines 5 - 23 and column 8, lines 30 - 44 of Mitsutake et al. Irrespective of the Examiner's contentions, Figures 1 and 2 of Mitsutake et al as described in column 8, thereof, discloses a face plate 17 having a fluorescent film 18 formed thereunder with an "ordinary metal back 19 well known in the art of CRT" (emphasis added) being arranged on the "inner surface of the fluorescent film 18, which is the side of the fluorescent film closer to the rear plate", wherein the metal back 19 is prepared by smoothing the inner surface of the fluorescent film 18 and forming an Al film thereon by vacuum deposition after preparing the fluorescent film 18 on the face plate substrate 17." (emphasis added) (column 8, lines 5 - 45). With regard to the Examiner's contentions concerning Fig. 4B and item 21b, as noted in column 8, lines 10 - 28 of Mitsutake et al, as shown in Fig. 4A, fluorescent members 21A of three different colors are realized in the form of stripes and any adjacent stripes are separated by a black electroconductive member 21b, wherein Fig. 4B shows that the fluorescent members of three primary colors of the stripe pattern of Fig. 4A is replaced by a triangular arrangement of round fluorescent members of three primary colors as shown in Fig. 4B which is separated by the black electroconductive member 21B. Thus, irrespective of the contentions by the Examiner, Mitsutake et al does not disclose, as recited in claim 1, for example a metal sheet provided on a surface of the light-transmissive substrate facing toward the rear substrate and perforated with a plurality of holes, wherein each of the plurality of holes has a corresponding one of the phosphors disposed therein, a metal back adapted to be

supplied with an anode voltage for leading the electrons from the plurality of cold cathode elements toward the metal sheet, and a thickness of the metal sheet being greater than a thickness of the phosphors disposed within the plurality of holes. It is noted that other independent claims, recite instead of the metal sheet, an electrically conductive sheet or a black sheet which is perforated with a plurality of holes and having a phosphor disposed therewithin, and the metal back leads electrons from the plurality of cold cathode elements toward the metal sheet, electrically conductive sheet or black sheet, with the thickness of the metal sheet, electrically conductive sheet or black sheet being greater than a thickness of the phosphor disposed within the plurality of holes. It is readily apparent that Mitsutake et al does not disclose or teach such recited features in the sense of 35 USC 102 or 35 USC 103 such that applicants submit that each of the independent claims patentably distinguish over Mitsutake et al and should be considered allowable thereover.

As to the combination of Mitsutake et al with the other cited art, applicants submit that such additional cited art of Spindt, Ando et al and Mizobata fail to overcome the deficiencies of Mitsutake et al as pointed out above, such that the proposed combination represents a hindsight reconstruction attempt utilizing the principle of "obvious to try" which is not the standard of 35 USC 103. See In re Fine, supra.

Turning to Spindt, for example, the Examiner refers to Spindt as disclosing a metal sheet 74 capable of holding the spacers. However, it is apparent that the metal sheet 74 of Spindt is not perforated with holes in which phosphors are disposed, which feature is also not disclosed by Mitsutake et al as pointed out above, such that the combination fails to provide the claimed features of the independent and dependent claims of this application.

Likewise, the Examiner refers to Ando et al which has a common inventor with Mitsutake et al patent, as disclosing item 1041 as an adherent layer, while recognizing that such adherent layer 1041 is not disclosed for bonding the metal layer to the light-transmissive substrate 1041, which is represented by item 1017 in Fig. 6 of Ando et al. In fact, applicants note that the utilization of the adherent layer 1041 in Fig. 6 of Ando et al for bonding a spacer to the metal layer represents a disclosure and teaching away from providing a recess in the metal layer for the spacer. Thus, it is apparent that the Examiner has merely chosen various parts from different references irrespective of the disclosure thereof and where such parts do not conform to the claimed features suggesting that it would be obvious to utilize the same in the manner recited in the claims of this application. The Examiner is utilizing the teachings of applicant against the teacher which is not proper. See In re Lee, supra. Thus, this proposed combination of references fails to provide the claimed features.

As to Mizobata, irrespective of the disclosure of U-shaped phosphors, it is readily apparent that Mizobata does not overcome the deficiencies of Mitsutake et al, as pointed out above and fails to provide the structural arrangement as recited in the independent and dependent claims of this application. Thus, it is readily apparent that this proposed combination of references is also deficient in the sense of 35 USC 103.

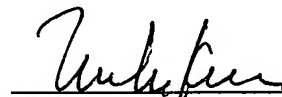
Applicants submit that as pointed out above, Mitsutake et al, Spindt, Ando et al and Mizobata taken alone or in any combination thereof fail to disclose or teach the recited features of the independent claims of this application in relation to a metal sheet, black sheet or electrically conductive sheet perforated with holes having phosphor disposed therein and arranged in a manner set forth together with a metal

back operating in the manner set forth and wherein the metal sheet, black sheet or electrically conductive sheet has a thickness which is greater than a thickness of the phosphor disposed within the plurality of holes. As such, all claims patentably distinguish over the cited art in the sense of 35 USC 102 and 35 USC 103 and should be considered allowable. Accordingly, favorable action in this application is respectfully requested.

To the extent necessary, applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in the fees due in connection with the filing of this paper, including extension of time fees, to the deposit account of Antonelli, Terry, Stout & Kraus, LLP, Deposit Account No. 01-2135 (Case: 520.43191X00), and please credit any excess fees to such deposit account.

Respectfully submitted,

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